been established and respectfully traverses the rejection. As set forth in the independent claims, Applicant's invention relates to performing asynchronous transfer mode (ATM) segmentation functions with a segmentation and reassembly (SAR) *software module implemented in a central processing unit (CPU) of a personal computer*, among other limitations.

As will be more particularly discussed later, Applicant believes that the Office Action is using impermissible hindsight to reach an obviousness conclusion and impermissibly treats the ATM terminal utilizing a software segmentation and reassembly device 20 (hereinafter **SAR device 20**) of Kwak as the equivalent of a personal computer having a SAR software module implemented in the CPU of the personal computer to perform SAR functions as in Applicant's claimed invention; whereas the ATM terminal of Kwak utilizing **SAR device 20** is the very type of prior art (see Applicant's Background) that Applicant's claimed invention was designed to improve upon.

In fact, Figure 3 of Kwak shows a detailed diagram of the software segmentation and reassembly interface **device** SSID 20 (or **SAR device 20**), which shows that the **SAR device 20** of Kwak includes a utopia interface 21, a double port RAM interface 22, a control unit 24, and a CPU interface 23. Obviously, this is not the equivalent of a personal computer having a SAR software module implemented in the CPU of the personal computer to perform SAR functions.

In the Office Action, the Office Action agrees with Applicant that the ATM terminal of Kwak is not the same as the personal computer of Applicant's invention, but then treats the ATM terminal of Kwak utilizing **SAR device 20** as the equivalent of a personal computer having a SAR software module implemented in the CPU of the personal computer to perform SAR functions; whereas the ATM terminal utilizing **SAR device 20** of Kwak is the very type of prior art (see Applicant's Background) that Applicant's claimed invention was designed to improve upon. As stated in Applicant's patent application by utilizing a software module implemented in

a CPU to perform these functions, "significant hardware savings may be had *over hardware implementations of any SAR chip.*"

However, the Office Action states that it is well known in the art that a personal computer can be used to perform multimedia communications including voice communications. Further, the Office Action states that one skilled in the art "would have been motivated" to use a personal computer as the ATM terminal for multimedia communications and that therefore it "would have been" obvious to one having ordinary skill the art to use a personal computer as the ATM terminal of Kwak. (Page 4, Final Office Action).

Applicant respectfully submits that the Office Action is using impermissible hindsight to reconstruct Applicant's claimed invention to reach an obviousness conclusion and is further impermissibly treating the SAR software module implemented in a central processing unit (CPU) of a personal computer as the equivalent of Kwak's ATM terminal utilizing ***SAR device 20****; whereas the ATM terminal utilizing* ***SAR device 20*** *of Kwak is the very type of prior art (see Applicant's Background) that Applicant's claimed invention was designed to improve upon.*

As stated in the MPEP § 2141.03:

> A *prima facie* obviousness rejection requires that three basic criteria be met. First, there must be some teaching, suggestion, or motivation, either in the references themselves, or in the knowledge generally available to one skilled in the art, to modify the reference or to combine the references. Second, there must be some reasonable expectation of success. Finally, the prior art reference, or references when combined, must teach all of the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, *and not based on the Applicant's disclosure.* MPEP § 2142; In re Vaeck, 947 F. 2d. 488 (Fed. Cir. 1991). (emphasis added).

MPEP § 2141.03 further warns that *impermissible hindsight must be avoided.* More importantly, as set forth in MPEP 2144.06..."In order to rely on equivalence as a rationale supporting an obviousness rejection, the equivalency must be recognized in the prior art, and cannot be based on applicant's disclosure or the mere fact that the components at issue are

functional or mechanical equivalents." Applicant respectfully submits that the Office Action is erroneously (in contradiction to the express rules of the MPEP) treating Applicant's invention of performing asynchronous transfer mode (ATM) segmentation functions with *a segmentation and reassembly (SAR) software module implemented in a central processing unit (CPU) of a personal computer* as being equivalent to performing the same functionality as prior art ATM terminals utilizing **SAR devices** (as exemplified in Kwak) and, therefore, in hindsight, finds Applicant's invention obvious over Kwak; when Kwak is the very type of prior art that the embodiments of Applicant's claimed invention were designed to improve upon in the first place.

The invention of Kwak relates to an asynchronous transfer mode adaptation layer (AAL) processing apparatus and method in an asynchronous transfer mode (ATM). (Kwak, column 1, lines 7-9). Particularly, the invention of Kwak is an **ATM terminal** having a central processing unit (CPU) operating in conjunction with a software segmentation and reassembly interface device (SSID) 20 to process AAL1, AAL3/4, and AAL5 in ATM. (Kwak, column 1, lines 10-14; emphasis added)-- i.e., not a ***personal computer*** interfacing to an ATM network in which the CPU of the personal computer *implements ATM segmentation and reassembly functions utilizing a software module (i.e. a SAR software module)*, as in Applicant's claimed invention. Figure 2 of Kwak is a block diagram of an AAL processing apparatus using a software segmentation and reassembly interface device (SSID 20) in an ATM terminal (Kwak, column 3, lines 49-52). Figure 3 of Kwak shows a detailed diagram of the software segmentation and reassembly interface device (SSID 20) (or **SAR device 20**), which shows that the **SAR device 20** of Kwak includes a utopia interface 21, a double port RAM interface 22, a control unit 24, and a CPU interface 23. Obviously, this is not the equivalent of a personal computer having a SAR software module implemented in the CPU of the personal computer to perform SAR functions. Figures 4 and 5 are flow charts showing AAL1, AAL3/4, and AAL5 processing (e.g. including segmentation and reassembly) performed by the SSID 20 **(SAR device 20)** in conjunction with the CPU 50.

Nowhere does Kwak teach or suggest performing ATM segmentation and reassembly functions with *a segmentation and reassembly (SAR) **software module** implemented in a CPU of **a personal computer***... In fact, Applicant's invention is directed away from using ATM terminals with specialized SAR devices and is designed around these types of devices.

As stated in Applicant's patent application, Applicant's invention uses "software implemented in a multipurpose central processing unit to form the segmentation and reassembly functions in a personal computer...The use of software to perform the segmentation and reassembly reduces the cost...." (Application, page 6). Moreover, as the Applicant points out in the application, by utilizing a software module implemented in a CPU to perform these functions, "significant hardware savings may be had *over hardware implementations of any SAR chip.*" (Emphasis added) (Application, page 8). Thus, the invention of using a software module to perform these functions, implemented in a CPU of a personal computer, provides significant advantages over the prior art.

Applicant respectfully submits that the Office Action is erroneously treating Applicant's invention of performing asynchronous transfer mode (ATM) segmentation functions with a segmentation reassembly (SAR) *software module implemented in a central processing unit (CPU) of a personal computer* as the equivalent of the prior art Kwak ATM terminal utilizing **SAR device 20**, and in hindsight, erroneously finds Applicant's invention to be obvious over Kwak; when Kwak is the very type of prior art that the embodiments of Applicant's claimed invention were designed to improve upon in the first place.

As pointed out by the Federal Circuit, reliance solely on "skill in the art," is generally insufficient to modify a reference to reach an obviousness judgment. In *Al-Site Corp. v. VSI Int'l, Inc.*, 50 USPQ2d 1161, 1171 (Fed. Cir. 1999), the Federal Circuit stated: "Rarely, however, will the skill in the art component operate to supply missing knowledge or prior art to reach an obviousness judgment." (Emphasis added). Thus, it is insufficient as a matter of law for the

Office Action to simply say that Applicant's invention "would have been obvious" because it would have been within the skill in the art of someone ordinarily skilled in the art at the time to simply modify Kwak to recreate Applicant's invention.

Furthermore, Applicant respectfully submits that the Office Action's position that one of ordinary skill in the art *would have been motivated* to use a personal computer as the ATM terminal for multimedia communications and that, therefore, it would have been obvious to one having ordinary skill in the art to use a personal computer as the ATM terminal of Kwak utilizing **SAR device 20**, *is impermissible hindsight and an impermissible use of the ATM terminal as an equivalent to* Applicants claimed invention for a segmentation and reassembly (SAR) *software module implemented in a central processing unit (CPU) of a personal computer*, among other limitations.

As should be noted, an ATM terminal, such as a networking terminal, is very different from a general-purpose personal computer that can be programmed, easily updated with new programs, is generally low cost in nature, is easily replaceable, etc. There is quite simply no motivation to alter Kwak's ATM terminal utilizing **SAR device 20** that performs ATM functions, and that works well for its intended purpose, to, *in hindsight*, try to recreate Applicant's invention. In fact, Applicant's invention is directed towards overcoming the limitations associated with higher cost ATM type terminals, by using general-purpose personal computers.

The only rationale given for modifying Kwak is that it "would have been obvious" to one of ordinary skill in the art to modify Kwak to obtain the claimed invention by merely utilizing a personal computer instead. *This is insufficient as a matter of law and is classic impermissible hindsight.*

Therefore, Applicant respectfully submits that Kwak, neither alone, nor in combination with the *skill in the art component*, would have rendered obvious Applicant's independent claims 1, 5, 9, and 14 directed to performing ATM segmentation and/or reassembly functions *in a CPU*

of a personal computer (e.g. with a segmentation and reassembly *(SAR) software module*), at the time of Applicant's invention.

Accordingly, Applicant respectfully submits that a prima facie case of obviousness has not been met and Applicant respectfully requests that the rejection of independent claims 1, 5, 9 and 14 be withdrawn. Therefore, Applicant respectfully submits that independent claims 1, 5, 9 and 14 are non-obvious and allowable. Furthermore, the dependent claims are patentable for being dependent from allowable base claims. The Examiner is invited to call Applicant's attorney if it is believed that such contact would further examination of the present application.

CONCLUSION

In view of the remarks made above, it is respectfully submitted that pending claims 1, 4, 5, and 7-16 define the subject invention over the prior art of record. Thus, Applicant respectfully submits that all the pending claims are in condition for allowance, and such action is earnestly solicited at the earliest possible date. The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application. To the extent necessary, a petition for an extension of time under 37 C.F.R. is hereby made. Please charge any shortage in fees in connection with the filing of this paper, including extension of time fees, to Deposit Account 02-2666 and please credit any excess fees to such account.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Dated: July 1, 2003

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CERTIFICATE OF FACSIMILE

I hereby certify that this correspondence is being transmitted via facsimile under 37 CFR § 1.116 to 703-872-9314 on July 1, 2003.

Susan McFarlane — 7/1/03 Date

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